

TITLE: MODIFICATION DESIGN OF HOOK ASSEMBLY FOR EXERCISE TOOL

BACKGROUND OF THE INVENTION

1. Field of the invention:

5 My invention relates to "Modification design of hook assembly for exercise tool". More specifically, the modification design of hook assembly for exercise tool comprises hook unit, cone-shaped taper and flexible tube. My invention constructs a well-fastened mechanism by putting flexible tube through the setting hole of the hook unit and then
10 inserting the cone-shaped taper into the perforating hole of the flexible tube. My invention applies to all kind of exercise tool and equipment such as jumping rope, chest-expander and pulling-forcer machine; and it demonstrates a more easy way of assembling and provides more security to avoid flexible tube falling off and prevents injury of exercise.

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2. Description of the Prior Art:

 In recent society more and more people exercise at gym or at home; therefore, equipment and tool for exercise are more popular in the market. It is ordinary to set jumping rope and chest-expander and pulling-forcer
20 machine at home or gym. And it is easy to find hook assembly has been used in those equipment and tool because hook assembly has been used to adjust those equipment and tool to meet what the exerciser's desire. However, those conventional hook assembly simply penetrates flexible tube (8) through the setting hole (91) of hook unit (9) and then pulls the
25 whole flexible tube (8) through the perforating hole (81) without any

secure protection; as shown on Fig.4 and Fig.5.

There are several defects in those conventional hook assemble as following:

1. Flexible tube (8) is easy to fall off from hook unit (9), and that
5 hurts exerciser suddenly, because flexible tube (8) simply
penetrates through setting hole (91) of hook unit (9) without any
security mechanism.
2. It is not easy to assemble the flexible tube (8) with hook unit (9).
3. Flexible tube (8) is made of plastic material that makes it easy to
10 break-up or peel off for it turns hardened and faded away fast.

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SUMMARY OF THE INVENTION

The objective of the present invention is to provide a means to increase the stability of hook assembly for exercise equipment and tool.

5 The present invention comprises hook unit, cone-shaped taper and flexible tube. It constructs a well-fastened mechanism by putting flexible tube through the setting hole of the hook unit and then inserting the cone-shaped taper into the perforating hole of the flexible tube.

10 The novel features which are considered characteristic for the invention are set forth in the claims. The invention itself, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of the invention when read and understood in connection with accompanying drawings.

15 BRIEF DESCRIPTION OF THE DRAWING

Fig.1 is a schematic drawing of the present invention;

Fig. 2 is preferred embodiment of the present invention;

Fig. 3 is the cutaway view of the present invention;

Fig. 4 is the schematic drawing of the prior art; and

20 Fig. 5 is the embodiment of the prior art.

DESCRIPTION OF THE PREFERRED EMBODIMENTS:

Referring now to the figures of the drawing in detail and first particularly, to Fig. 1 thereof, there is shown the present invention comprising hook unit (1), cone-shaped taper (2) and flexible tube (3).

5 Extension unit (11) is on the bottom of the hook unit (1). There is a taper-shaped setting hole (12) in the middle of the extension unit (11). Cone-shaped taper (2) comprises two round layers. Stopper (21) is on the top of cone-shaped taper (2). Flexible tube (3) is made of resilient rubber and with perforating hole (31).

10 Fig. 2 illustrates in more detail an exemplary of assembly of the present invention. First, flexible tube (3) penetrates through setting hole (12) of hook unit (1), then insert cone-shaped taper (2) into the perforating hole (31) of flexible tube (3), and pull flexible tube (3) downward to make the whole assembly tighter without any slit in between.

15 Fig. 3 demonstrates more detail relationship and collocation of hook unit (1) and cone-shaped taper flexible tube (3). The maximum radius of the stopper (21) and the thickness of the flexible tube (3) are bigger than the radius of setting hole (12). With the mechanism mentioned above; shown in Fig 3, the present invention makes hook unit (1), cone-shaped
20 taper (2) and flexible tube (3) well-fastened together with each other and keeps the whole assembled unit of the present invention in one piece even exerciser pulls it with overload strength drastically.

There are two major benefits of the present invention, first, the present invention shows a more efficient way for mass production of hook
25 assembly by the way of assembling cone-shaped taper (2) and flexible tube

(3) shown in present invention. Second, cone-shaped taper (2) is inserted into perforating hole (31) without any slit in between cone-shaped taper (2) and perforating hole (31) and setting hole (12). With mechanism mention above, the present invention makes a well-fastened device to stand the
5 drastic pulling of the exerciser and avoids flexible tube (3) falling-off from the hook assembly.

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